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ABSTRACT

This paper explores the relationship between self-esteem, measured five times during a span of eight years, and the educational and occupational attainments of a nationwide sample of over 1600 young men. An overall increase in self-esteem was observed between the start of 10th grade (1966) and a point five years after high school (1974). Surprisingly, 10th grade self-esteem correlated better with eventual educational attainment (as of 1974) than did 1974 self-esteem. Longitudinal multivariate analysis led to the conclusion that factors associated with educational success become less central to self-evaluations during high school and the following years. (Author)

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Self-Esteem and Educational Attainment: A Longitudinal Analysis

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Self-Esteem and Educational Attainment: A Longitudinal Analysis

Most people, including social scientists, believe that social environments and experiences can have a lasting impact on personality characteristics. But it is also commonly assumed that variations in personality characteristics lead different people to be exposed to different sorts of environments and experiences. Thus the causal linkage between environments and personality is seen as a two-way street--environments and events shape people, but people also play an important part in selecting and shaping their own experiences.

This paper presents findings from a nationwide longitudinal study designed to deal with some of these interrelationships between persons and environments. The study has followed a sample of young men through late adolescence and early adulthood, focusing especially on the impact of major educational and occupational experiences. Our conceptual approach has acknowledged that, in the real world, there are important prior individual differences which predispose toward different environmental experiences; nevertheless, we also assume that these experiences lead to still further individual differences. Thus we assume that differences correlated with exposure to various environments and experiences are greater after the exposure has actually occurred. (See Bachman, Kahn, Mednick, Davidson, & Johnston, 1967, for an overview of the conceptual framework and purposes of the study.) Stated in such a general form, the above proposition may seem indisputable. But the purpose of our research

has been to explore the proposition in a number of more concrete forms. For the present analysis, we have selected a dimension of personality which may illustrate the two-way street of causation particularly well: the dimension of self-esteem or self-evaluation.

Self-esteem has long been the subject of theoretical speculation, and more recently has been the topic of several major empirical studies (Coopersmith, 1967; Rosenberg, 1965; Rosenberg & Simmons, 1971). Gergen (1971) and others who have reviewed the literature in this area have noted that the term self-esteem has been used in various ways by different authors. Our own approach has been heavily influenced by the work of Rosenberg and also that of Coopersmith. Like these authors, (a) we use the term self-esteem to refer to an individual's self-evaluation or judgment of his own worth, (b) we treat it as a global dimension rather than as a number of more specific ones, and (c) we view it as a relatively enduring characteristic rather than something which shifts abruptly from one situation to another.

An additional perspective on self-esteem has been provided by French and Kahn (1962), who argued that "The various dimensions used by the person for perceiving himself and others are not all equally important to the person. They may vary in centrality, defined as the degree to which they determine the person's self-esteem" (p. 19). This notion that different aspects of the person may be differentially central to self-esteem is also found in the work of Douvan and Gold

(1967), who noted that one of the more important components of self for most adolescent boys (in contrast to girls) is a sense of competence and achievement expressed in competitive fields such as athletics, work and intellectual activity. The concept of centrality, as used by these authors, is not incompatible with a treatment of self-esteem as a single global dimension; it simply suggests that there can be variations and changes in the relative weights--i.e., the centrality--of the several components which jointly constitute global self-esteem.

Our focus in this paper is upon the links between self-esteem and success--specifically, educational and occupational attainments of young men in their early twenties. A number of authors have presented or summarized evidence that self-esteem is linked to educational and occupational attainment (Coopersmith, 1967; Gergen, 1971; Rosenberg, 1965; Rosenberg & Simmons, 1971; Wylie, 1961), and our own earlier work provides further support (Bachman, 1970, Appendix D). Particularly relevant is Purkey's summary of the research relating the self-concept to school achievement. He concludes that "...there is no question that there is a persistent relationship between the self and academic achievement..." And, although the data do not provide clear-cut evidence about causal direction, he interprets the findings as showing "...that there is a continuous interaction between the self and academic achievement, and that each directly influences the other" (Purkey, 1970, p.23).

In the area of occupational success, Luck and Heiss (1972) report that self-esteem is positively linked to a number of job dimensions, including income, prestige, upward mobility, and personal satisfaction with occupational achievement; and Kaufman (1973) reports that loss of a job resulted in diminished self-esteem among a group of professional engineers and scientists.

In sum, there is reason to believe that self-esteem is linked to educational and occupational attainment, and that this linkage probably involves a number of different and complexly interrelated patterns of causation. While it is a rather simple matter to point out the complexities, the problem of disentangling such reciprocal causation is extremely difficult and vexing. In most cases, the empirical evidence is limited to a static relationship at a single point in time--e.g., survey respondents with higher levels of educational attainment also have higher mean scores on a measure of self-esteem (Weidman, Phelan, & Sullivan, 1972). While such findings are important in demonstrating that a relationship does exist, they leave us largely in the dark about causal dynamics.

The present study is not limited to a single point in time. Our data were obtained by surveying a sample of young men (and measuring their self-esteem) five different times, beginning at the start of tenth grade and ending eight years later. Thus our measures of self-esteem span the high school years as well as the five years

after high school--a period in which nearly all of our respondents completed formal education and entered the labor market. Our measures of educational and occupational attainment are based on data collected at the end of the study. These data on self-esteem and attainment, plus a number of additional measures of background, ability, and other characteristics, permit us to go several steps beyond the usual cross-sectional analyses and interpretations.

Before turning to the analysis of these data, let us be more specific about the relationships we expect to find and the bases for these expectations. We begin by distinguishing three logically distinct patterns of causation, all of which may play some part in the relationship between self-esteem (A) and attainment (B):

A causes B: Self-esteem contributes directly to attainment. Individuals with positive self-concepts are likely to be ambitious, i.e., they will set relatively high levels of aspiration. Moreover, their positive views of their own abilities and competence will help them to withstand the occasional setbacks and reversals along the road to educational and occupational attainment.

B causes A: Attainment contributes, both directly and indirectly, to heightened self-esteem. Educational and occupational attainments represent important sources of direct feedback about the self, and this may be particularly true for adolescents and young adults. There are indirect effects as well; those individuals with the most

education and the highest status jobs are most likely to be exposed to "ego-boosting" experiences in their day-to-day activities.

C causes both A and B: Some of the underlying determinants of self-esteem are also important determinants of attainment. Academic ability, past educational accomplishments, and family socioeconomic level are all likely to contribute to a young person's self-esteem. But these factors of background and ability also directly influence educational and occupational attainment. Thus, an additional reason for expecting self-esteem to be correlated with attainment is not that one causes the other, but rather that there is a substantial overlap in the factors which determine them (the "C" variables).

The three patterns of causation outlined above do not represent testable hypotheses; rather, they form the basis for deriving a number of such hypotheses spelled out below. The hypotheses are all stated in terms of attainment in general; the specific applications to be trusted here involve educational attainment (amount of schooling completed) and several aspects of occupational attainment.

Hypothesis 1. Early self-esteem (measured during high school) is positively correlated with later attainment (based on A causes B and also on C causes both A and B).

Hypothesis 1a. Early self-esteem is positively correlated with later attainment, after statistically controlling background and ability (based only on A causes B).

Hypothesis 2. Later self-esteem (measured five years after high school) is positively correlated with attainment (based primarily on B causes A but perhaps also reflecting A causes B and C causes both A and B).

Hypothesis 2a. Later self-esteem is positively correlated with attainment, after statistically controlling background and ability and also earlier self-esteem (based only on B causes A).

Hypothesis 3. Attainment (five years after high school) is more strongly correlated with later self-esteem than with earlier self-esteem. This hypothesis is based on B causes A, plus our assumption that the reciprocal pattern of causation between A and B will involve an upward (or downward) spiraling effect, similar to the notion that "the rich get richer and the poor get poorer." Given that one never does a completely adequate job of statistically controlling other possible causes (C variables), we consider this hypothesis especially important as providing clear evidence of the impact of attainment.

Hypothesis 3a. Attainment is more strongly correlated with later self-esteem than with earlier self-esteem after statistically controlling background and ability (excludes C causes A and B).

Hypothesis 4. Background and ability are correlated with self-esteem and with attainment (based on C causes both A and B).

The hypotheses outlined above summarize the kinds of bivariate relationships (Hypotheses 1, 2, 3, and 4) and multivariate relationships (Hypotheses 1a, 2a, and 3a) which would be expected, based on

our assumptions about the several patterns of causation between self-esteem and attainment. However, these hypotheses make no allowance for shifts along the dimension of centrality. To deal with that omission we offer the following much more open-ended hypothesis.

Shifting Centrality Hypothesis. A more-or-less gradual shift in the strength of relationship between self-esteem and any factor of background, ability, or attainment may indicate an increase or decrease in that factor's centrality for self-esteem. For example, we might expect that things having to do with occupational attainment would become increasingly important to young men in general as they leave school and enter the job market. On the other hand, things having to do with educational success might become less important, at least among those who do not continue their education beyond high school.

Method

Sample

The data for this report came from the Youth in Transition project, a nationwide longitudinal study of young men. Details of the design can be found in several earlier reports (Bachman et al., 1967; Bachman, 1970; Bachman, Green, & Wirtanen, 1971). The sample is a multi-stage probability sample, clustered by school, of all tenth-grade boys in public high school in 1966 in the 48 contiguous states. Data collections took place in Fall of 1966 (tenth grade), Spring of 1968 (eleventh grade), Spring of 1969 (twelfth grade), Spring of

1970, and Spring of 1974. The first four data collections consisted of interviews and questionnaires administered by professional interviewers on the staff of the University of Michigan's Survey Research Center; the fifth was a self-completed mail questionnaire.

Of the original selected sample of 2,277 boys located in 87 schools, data were collected from 2,213 (97.2%) in 1966. In the fifth wave (1974), sample attrition reduced the number of completed questionnaires to 1,628 (73.5% of the original respondents). For purposes of this paper we will limit the sample to only those 1,628 men whose participation in the study extended through 1974.

The sample attrition has, of course, reduced the generalizability of the results. While the 585 who responded in 1966 but not in 1974 do differ from the 1,628 retained respondents along several dimensions, we believe the sample remains reasonably representative of the original population, particularly with regard to relationships among variables. (See Bachman et al., 1971, pp. 18-19, and Johnston, 1973, pp. 231-239, for further discussion on this point.) Along the dimension of primary interest for this report, self-esteem, the 1966 scores of the 585 panel dropouts averaged insignificantly higher (by less than 10% of a standard deviation) than the corresponding scores for the 1,628 retained respondents.

Measures

The ten item measure of self-esteem is close to that used by Rosenberg (1965). The first six items in Table 1 were adapted directly

from his scale; the other four items, similar in content, were developed by Cobb, Brooks, Kasl, and Connelly (1966). Respondents were asked to indicate on a five-point scale how often each item was true for them. The five response categories--almost always, often, sometimes, seldom, and never--were coded from 1 to 5, with higher values assigned to the higher self-esteem responses. The scale is nearly balanced with six positive items and four negative items. The self-esteem index is an unweighted mean of the ten items, with up to two missing values allowed. Table 1 includes the means, standard deviations, and item index correlations (uncorrected for part-whole inflation) for 1966 (Time 1) and 1974 (Time 5).

While there is some variability, the item-index correlations are fairly similar across items; generally, the correlations for 1974 are slightly stronger than those for 1966. Factor analyses performed on both the 1966 and 1974 items revealed a strong first factor in each case, explaining 64% of the 1966 common variance and 69% of the 1974 common variance. The item loadings ranged from .38 to .69.

Insert Table 1 About Here

Coefficient alphas are .75, .76, .79, .80, and .81 for 1966, 1968, 1969, 1970 and 1974, respectively. A single test-retest reliability was estimated using a path analysis approach as developed

by Heise (1969). This estimate, which assumes that the reliability is the same at each time, is .75. Test-retest reliabilities were also computed for each pair of measurements, using formulas suggested by Heise (1969). (If three measurements are made at Times A, B, and C, the reliability is computed as $r_{AB}r_{BC}/r_{AC}$.) With five measurement points, there are ten possible combinations of three measurements. Each of the ten reliability coefficients was computed; the range is .69 to .74, with a mean of .71. All these estimates of reliability, both internal consistency and test-retest, seem acceptably high. Stability coefficients--to be discussed in the results section--were also computed. (A stability coefficient is the correlation between true scores at one time with true scores at another time.)

While the reliability and stability of a measure can be estimated in several ways, validity is another matter. The kind of validity appropriate for a variable like self-esteem is construct validity (Wylie, 1974, p. 38). Self-esteem we hypothesize, should relate to other variables in certain directions, and this provides a possible source of evidence on construct validity. Self-esteem (1966) correlates in the expected directions with measures of: intellectual ability (.21), somatic symptoms (-.34), negative affective states (-.52), happiness (.54), rebellious behavior in school (-.33), and needs for self-development (.44) and social

approval (.29). See Bachman (1970, especially pp. 242-243) for more information on these correlations and the measures.

Other measures used in this report will be defined briefly; more complete information can be found in Bachman et al. (1967) and Bachman (1970).

Educational attainment as used in this report is a six-category variable based on data collected in 1974: (1) high school dropouts, i.e., those without a high school diploma, (2) high school graduates with no further education, (3) those with some college experience but no degree, (4) those with an associate degree, (5) those with a bachelor's degree, and (6) those with a bachelor's degree plus some graduate work.

Socioeconomic level, which refers to the respondent's family background, is an equally weighted mean of the following six items: status of father's occupation (Duncan, 1961), father's education, mother's education, a checklist of possessions in the home, number of books in the home, and the ratio of rooms per person in the home.

Ability is a mean of three equally weighted measures of intellectual ability--Quick Test (Ammons & Ammons, 1962), Gates Test of Reading Comprehension (Gates, 1958), and the General Aptitude Test Battery - Part J, Vocabulary.

College plans is a dichotomy, coded 1 if the respondent indicated intentions to attend college, 0 otherwise.

Self-concept of school ability is an index of three items which asked the respondent to rate himself, compared to his peers,

on school ability, intelligence, and reading ability.

Grades were ascertained by self-report; respondents were asked to report an overall average grade for the previous year. The 1966, 1968, and 1969 measures refer to ninth, tenth, and twelfth grade grades, respectively. (Actual grades in Grade 12 obtained from school personnel correlated .70 with self-reported grades for a sub-sample of 766 for whom the actual grades were later obtained.)

Rebellious behavior in school is a mean of thirteen items dealing with disruptive behavior in school, rule-breaking, and poor school work.

Delinquent behavior in school is similar to rebellious behavior but the seven behaviors asked about are more serious.

Status of aspired occupation is the Duncan (1961) status score assigned to the work that the respondent thinks he might do for a living in the long run.

Status of attained occupation is the Duncan status score assigned to the respondent's actual occupation during the fifth data collection (1974) or, for those not employed at that time, their most recent occupation.

Statistical Significance

The multi-stage sampling design of the present study produces larger sampling errors than would a simple random sampling design (Kish, 1957), making the use of the usual tables of significance values inappropriate. The design effect can be estimated, however, and used to adjust downward the actual number of cases. The adjusted frequency is then used in the usual tables. The design effect of the statistics in this report is estimated to be about 2.25 (Kish & Frankel,

1970), so in all assessments of statistical significance, the frequencies used are equal to the actual n's divided by 2.25.

Results

Our presentation of findings proceeds through several stages. We begin with an overview of changes in self-esteem scores across time. Next, we consider bivariate relationships, focusing primarily on the links between attainment measures and the five different self-esteem measurements. Finally, we turn to multivariate analyses. As we move through these stages of analysis we will note implications for specific hypotheses; however, we will not undertake any summary evaluation of hypotheses and causal linkages until we reach the discussion section.

Overall Changes in Self-Esteem

Self-esteem scores were fairly high for our respondents at the start of tenth grade, and gradually rose to a level one standard deviation higher during the nearly eight-year span of the longitudinal study. The mean scores included in Table 2 show a modest increase in self-esteem throughout high school (1966 to 1969), rather little change during the following year (1969 to 1970), and a more substantial increase during the next four years (1970 to 1974). The pattern of change is consistent across all ten of the items in the self-esteem scale; Table 1 shows for each item an increase in mean score and a decrease in standard deviation from 1966 to 1974. The decrease in standard deviation may reflect a "ceiling effect" at the item level,

since the mean score for each item moved closer to the upper limit of self-esteem. At the index level, however, there is less evidence of a "ceiling effect," since the standard deviation dropped only slightly from .52 to .48.

Insert Table 2 About Here

The pattern of correlations among self-esteem measures, presented in Table 2, suggests a process of gradual evolution and shift throughout the period we studied. As the table indicates, the longer the time interval between any two self-esteem measurements, the lower the correlation. The table also includes stability coefficients, which are estimates of the "true " cross-time correlations after correcting for unreliability in the measures (Heise, 1969). Again, the longer the time interval, the lower the stability.

Links to Educational Attainment and Related Factors

Educational Attainment. Self-esteem scores for six categories of educational attainment, ranging from high school dropouts to those in graduate school are presented in Figure 1. Consistent with Hypotheses 1 and 2, we find a positive correlation between self-esteem and level of educational attainment--the higher the level of education a respondent eventually attained, the higher was his self-esteem throughout the course of the study. Indeed, the degree of consistency in the relationship is

truly striking; from the start of tenth grade to a point nearly eight years later, the ordering of mean self-esteem scores (from lowest to highest) is identical to the ordering of educational attainment categories, with those who became high school dropouts always lowest in average self-esteem and those who went on to graduate training always highest (differences among the six group means are significant at $p < .001$ for all five times). Moreover, as the eta values and product-moment correlations at the bottom of Figure 1 indicate, the relationship between self-esteem and educational attainment (as we scaled it) is almost perfectly linear.[1]

The trend over time for self-esteem is basically upward, with each subgroup showing a largely parallel pattern of increases in mean scores. One exception, while not extremely large, is noteworthy; the self-esteem of high school graduates who did not continue their education (Group 2) rose during the year following high school, whereas the scores for dropouts (Group 1) declined slightly during the same period. This relative loss in self-esteem for the dropout group was mostly of limited duration; four years later (in 1974) the difference between Groups 1 and 2 had shrunk to nearly the same level as occurred during the first three data collections.

The most surprising finding shown in Figure 1 is the fact that self-esteem measured at the beginning of tenth grade correlates more strongly with eventual educational attainment than does self-esteem

measured after the educational attainment levels had been reached. This tendency for the self-esteem trend lines to converge during high school and the years that followed is evident in the figure itself (especially if we disregard the relatively small Group 1), and it is also reflected in the drop in correlation values (from $r = .26$ in 1966 to $r = .15$ in 1974, $p < .01$). We will discuss this finding at some length later; for the present, it is sufficient to note that a steady decrease in self-esteem differences among educational attainment subgroups is quite the opposite of what we projected in Hypothesis 3, assuming a pattern of reciprocal causation between early self-esteem, educational attainment, and later self-esteem.

Other Factors Linked to Self-Esteem. Given the fairly strong link between early (1966) self-esteem scores and later educational attainment, it is important to examine the several possible causes for such a relationship. One possibility is that early self-esteem is indeed a determinant of later educational success (A causes B: Hypotheses 1 and 1a). Another possibility is that factors of background, ability, past school performance, and aspirations, all of which may contribute to educational attainment, are also among the causes of self-esteem (C causes both A and B: Hypothesis 4). We measured a number of such dimensions at several points throughout the study; their correlations with self-esteem (at all five points in time), as well as their correlations with educational attainment, are presented in Table 3. (Also included in Table 3 for comparison purposes are three

measures of attainment as of 1974: level of education completed, employment versus unemployment, and status of occupation.)

Insert Table 3 About Here

We can begin our examination of Table 3 by noting the correlations in the column which is second from right; they indicate that all of the measures included in the table are linked to educational attainment. Many of the relationships, e.g., those involving academic ability (test scores) and classroom grades, are quite substantial.

The more important finding displayed in Table 3 is that each of the dimensions included in Table 3 is correlated with self-esteem. Of particular interest is the fact that in every instance the early measures of self-esteem, usually the 1966 scores, show the strongest correlations, whereas the weakest correlations involve self-esteem as measured in 1974. It is worth noting that the self-concept of school ability measured in 1968 shows the highest correlation with self-esteem measured at the same point in time, and this is also true for the 1968 measure of rebellious behavior in school (but not for the 1968 measure of delinquent behavior in school). We were not surprised to find some heightening of correlations among variables measured in the same data collection; on the contrary, the surprising fact is that this "time matching" phenomenon does not appear more often in Table 3. Other dimensions measured at multiple points in time, such as college plans

(Times 1 through 3) and occupational aspirations (Times 1 through 5), show little or no "time matching" effect; instead, the overwhelming tendency is that plans or aspirations, no matter when they were measured, show the strongest association with tenth grade (1966) self-esteem and progressively weaker relationships with later self-esteem.[2]

Two implications drawn from these findings are particularly relevant for our exploration of the linkage between success and self-esteem. First, consistent with Hypothesis 4, it seems clear that those factors which help to determine later educational attainment are also determinants of self-esteem. Second, it appears that these educationally-relevant factors make a significant contribution to self-esteem during the early high school years, but this contribution becomes steadily less important as young men progress through high school and continue into other educational and/or occupational environments. These implications are entirely consistent with our earlier findings about self-esteem and educational attainment (Figure 1). Taken as a whole, the pattern of results suggests that things having to do with educational success--academic skills, past classroom performance, future aspirations, and the like--undergo some reduction in "centrality" or "salience" for the self-esteem of young men during the late high school years and the period that follows.

We noted earlier, when we introduced the shifting centrality hypothesis, that a reduction in the centrality of academically relevant factors might take place among the young men in our study who did not continue their education beyond high school, whereas among those who did go on to college the centrality of such factors might remain high. The correlations shown in Table 3 were examined separately for four categories of respondents: (a) those who initially (at the start of tenth grade) planned to go to college and later did, (b) those who planned to go but did not, (c) those who did not initially plan on college but later did attend, and (d) those who neither planned to attend nor did. A detailed review of the findings of this analysis is beyond the scope of the present paper; however, we can report that there was no indication that the centrality of academic factors dropped more sharply among those who did not go on to college (categories b and d).

Impact of Occupational Experiences

Occupational success is a more complicated concept than educational success. In this paper we deal with two aspects of occupational experience: employment versus unemployment, and occupational status (Duncan scale).[3]

Unemployment. Table 4 contrasts self-esteem scores for those who were unemployed at the 1974 survey and those who were employed full-time or part-time in the civilian work force (full-time students

and those in military service are omitted from the table). The bottom line of the table indicates only small and non-significant differences in self-esteem between the two groups until 1974, at which point the difference reaches about one-third of a standard deviation. Although this difference is not so large as to suggest a devastating impact of unemployment upon self-esteem, the finding does indicate that failure to have a job has some negative effect on self-esteem.

Insert Table 4 About Here

The negative impact of unemployment may be linked to educational level. Those who have followed the socially-approved path of high school graduation and perhaps also college have "done their part," so to speak, and thus may be less inclined to view unemployment as their own fault. High school dropouts, on the other hand, have followed a path which is disapproved; public announcements proclaim that dropping out "doubles the chances of being unemployed," and the unemployed dropout may thus be more likely to blame himself for his predicament. We examined the impact of unemployment (as of 1974) separately for three levels of educational attainment: dropouts without high school diplomas, high school graduates with no further education, and those who entered college (including those who completed associate and bachelor degrees). Among the college entrants, the mean gain in self-esteem scores from

1966 to 1974 is .44 for the employed (N=659) and .38 for the unemployed (N=49); this difference is small and of little consequence. Among the high school graduates who did not enter college, the mean gain in self-esteem is .58 for the employed (N=387) and .50 for the unemployed (N=39)--again, a rather small difference. Among high school dropouts, on the other hand, the difference is more substantial; the mean gain in self-esteem is .62 among the employed (N=83) but only .31 among the unemployed (N=18). While this difference falls short of statistical significance given the small number of unemployed dropouts, it is certainly in a direction consistent with the explanation outlined above.

In sum, we find for the sample as a whole, that the dimension of employment-unemployment seems to have an impact on self-esteem measured at the same point in time (1974) but little relationship to earlier measures of self-esteem. This pattern of findings is consistent with Hypotheses 2 and 3 (B causes A). On the other hand, Hypothesis 1 which posits an impact of self-esteem upon attainment (A causes B), is not supported when we treat employment (versus unemployment) as a measure of attainment. Our analysis of educational subgroups produced some differences which, although not statistically significant, suggest that the negative impact of unemployment on self-esteem may be more pronounced among high school dropouts than among those who have completed high school.

Occupational status. Given our initial theorizing about the positive impact of success on self-esteem, our expectation was that those young

men who attained higher status jobs would show above average gains in self-esteem; thus we expected that occupational status in 1974 would be positively correlated with self-esteem in 1974, and that the relationship with earlier measures of self-esteem would be weaker (Hypothesis 3). The correlations presented in Table 3 show that occupational status in 1974 has basically the same strength of association with self-esteem no matter when self-esteem was measured. (The slightly higher correlation with 1970 self-esteem is not significantly different from the other correlations and may represent nothing more than chance variation.) One of the problems with these zero-order correlations is that a number of the factors which may be among the causes of educational attainment and self-esteem are also related to occupational status. Thus we may be able to get a clearer picture of what occupational success adds to self-esteem if we introduce statistical controls for these other prior influences.

Multivariate Analyses

Controlling background and ability. Of all the dimensions shown in Table 3, the first few--family socioeconomic level, academic ability, and ninth grade classroom grades--seem particularly appropriate to treat as factors which may play a causal role in determining both educational attainment and self-esteem. The other dimensions in Table 3, such as self-concepts of ability, patterns of delinquent or rebellious behavior in school, educational and occupational aspirations, may also play a

causal role; however, their position in a causal sequence, and also their theoretical relationship to a global measure of self-esteem, are a good deal more debatable. Accordingly, we will take the somewhat conservative approach of controlling only grades, ability and familiy socioeconomic level in our efforts to learn what may be added to self-esteem by educational and occupational success.

The necessary data are provided in Table 5. The first row of the table presents multiple correlation coefficients, predicting self-esteem at each point in time from our measures of background, ability, and grades. Just as we found when we looked at these measures separately in Table 3, we see that self-esteem was most predictable from these factors in 1966, and became steadily less predictable in the eight years that followed. But the question of greater interest to us here is what happens to the relationships between self-esteem and our measures of educational and occupational attainment when we statistically control background, ability and grades.

Insert Table 5 About Here

The second row in Table 5 presents the partial correlations between educational attainment and self-esteem, controlling background, ability and grades. The partial correlations are much smaller than the zero-order relationships shown in Table 3. Moreover, there is much less evidence of a shift in correlation between educational attainment and

self-esteem; educational attainment has partial correlations of .10 with 1966 self-esteem and .07 with 1974 self-esteem. This finding provides little support for either Hypothesis 1a (A causes B) or Hypothesis 2a (B causes A). On the other hand, the multiple correlation data in the first row of the table fit Hypothesis 4 (C causes both A and B); additionally, the downward trend in multiple correlations with self-esteem from 1966 to 1974 is fully consistent with the shifting centrality explanation that those factors of background and ability which lead eventually to educational success are more central to self-esteem during the early high school years than during the period which follows.

The third row in Table 5 shows the partial correlations between 1974 occupational status and all five self-esteem measures, with background, ability and grades controlled. Again, the partial correlations are lower than the zero-order relationships (in Table 3), but the reduction is not nearly so dramatic as in the case of educational attainment. Most important, the partial correlations show a small but theoretically important shift: job status in 1974 is more closely linked to self-esteem in 1970 and 1974, than to self esteem in 1966, 1968 and 1969. This finding is consistent with Hypotheses 2a and 3a (B causes A).

The fourth row in Table 5 presents partial correlations between employment-unemployment in 1974 and the five self-esteem measures, again controlling background, ability and grades. In this case, the controls

make very little difference; the partial correlations are quite similar to the zero-order relationships shown in Table 3. Employment (versus unemployment) in 1974 shows a small positive correlation with 1974 self-esteem but no correlation with earlier measures of self-esteem. This pattern of findings, like the findings for occupational status, is consistent with Hypotheses 2a and 3a and indicates a small positive impact of occupational attainment upon self-esteem.

Controlling background, ability, and initial self-esteem. Our analysis approach thus far has given basically equal treatment to the five self-esteem measurements taken throughout the course of the study. Now we will limit our focus to self-esteem at the end of the study (1974) and attempt to isolate any unique contribution that can be attributed to educational and/or occupational attainment. The technique again is partial correlation, predicting 1974 self-esteem from our three measures of attainment or success: (a) educational attainment, (b) status of attained occupation, and (c) employment (versus unemployment). Table 6 shows what happens to the relationship between each of these variables and self-esteem as we introduce an increasing number of statistical controls: first we control the background, ability, and school performance measures available in 1966; then we also control 1966 self-esteem scores; and finally we extend the controls to include grades and self-esteem measured in 1968 and 1969. (This controlling for earlier self-esteem provides the most thorough test of hypothesis 2a.)

Insert Table 6 About Here

Looking first at the column of relationships between educational attainment and self-esteem we see that the original (zero-order) correlation is cut almost in half simply by controlling initial background, ability, and school performance measures. When we control also for initial self-esteem scores, the partial correlation becomes still smaller; and when we extend the controls to include self-esteem and performance measures throughout the high school years (1966 through 1969), the partial correlation between educational attainment and 1974 self-esteem is a trivial .042. (If we also control 1974 occupational status, the partial correlation between educational attainment and self-esteem shrinks still further to .020.) In short, once we control background and ability differences, plus grades and self-esteem scores throughout high school, we find virtually no unique contribution of educational attainment to self-esteem five years after high school. This clearly fails to support Hypothesis 2a for the dimension of educational attainment.

The findings for occupational factors are somewhat different. Looking next at the relationship between status of attained occupation and self-esteem, we find that the initial correlation is reduced appreciably when background, ability, and grades measures are controlled; however, the further controls for self-esteem and additional grades measures throughout high school produce virtually no further change in the partial correlation between job status and self-esteem. (Indeed, even when we also control educational attainment, the partial correlation between job status and self-esteem shrinks less than one point to .085.)

Neither the partial correlation, nor the unadjusted (zero-order) correlation between occupational status and self-esteem, is very strong; thus it would be inaccurate to claim a large impact for job status. Nevertheless, it appears that occupational status five years after high school does make a significant, albeit modest, unique contribution to self-esteem. Thus, the findings along this dimension are consistent with Hypothesis 2a.

Turning finally to the impact of unemployment, we find that the initial (zero-order) correlation between the employment measure and 1974 self-esteem is basically unchanged by partialling out background, ability, grades, and earlier self-esteem measures. Time 5 unemployment is virtually uncorrelated with earlier self-esteem and with the other factors that are correlated with self-esteem; thus the unemployment effect on self-esteem seems entirely unique, and represents the clearest instance in the present data of a contemporaneous environmental factor--the "unemployment environment"--showing an impact on self-esteem (consistent with Hypothesis 2a). It should be added that the correlation of about .10 between employment and self-esteem may tend to understate the impact of being out of a job. Only a relatively small proportion of respondents (8.4%) were unemployed in 1974, but their self-esteem scores were appreciably lower than scores for the employed (see Table 4).

Discussion

We stated at the outset of this paper that self-esteem is likely to be linked to educational and occupational attainment--probably through a number of complexly interrelated patterns of causation. That general expectation has certainly been confirmed by our analyses, although some of our specific hypotheses about causal connections have not. Near the end of this section we draw some conclusions about causation. Before that, we discuss our findings on changes in self-esteem, and links to both educational and occupational outcomes.

Change and Stability in Self-Esteem

Our findings suggest that self-esteem is not a characteristic of personality that is firmly fixed by the time a young man enters high school. On the contrary, we found a gradual but quite substantial rise in average self-esteem throughout high school and particularly during the five years following high school. Our analysis was not designed to uncover the probable cause of this rise. However, it does seem reasonable to rule out the notion that leaving high school produces a sudden and marked shift in self-evaluation; mean self-esteem scores did not show a greater than usual increase during the first year following high school, and stability estimates are virtually identical for the one-year periods that preceded and followed graduation. Perhaps the gradual rise in self-esteem scores among young men during this period simply reflects their increasing maturity and the resulting increase in status, opportunities, and privileges.

Although we found a substantial amount of change in self-esteem over time, we also found a good deal of stability in scores from one year to another. We estimate that, among young men in their late teens and early twenties, self-esteem (after adjustments for measurement unreliability) has a stability of nearly .9 for one-year intervals. Over longer periods the stability is proportionately lower, so that for the total eight-year span of the study we estimate the stability of self-esteem to be slightly over .4. These findings concerning stability, coupled with the fact that the overall rise in scores was quite gradual, provide some support for the view of self-esteem as a relatively enduring characteristic rather than something which shifts abruptly from one situation to another. Change certainly does occur during and following late adolescence, but the change seems to be gradual and developmental rather than revolutionary.

The Changing Link with Education

We found self-esteem linked with educational attainment; however, the linkage is complex and shows evidence of change over time. Those young men in our sample who eventually completed college and entered graduate training showed the highest mean self-esteem; those who never attained the high school diploma had the lowest mean self-esteem, and the groups between these two extremes had mean self-esteem scores which neatly matched their level of educational attainment. The finding that self-esteem is positively related to educational attainment is

not surprising. But the relationship is not strongest and clearest at the end of the study, when individuals had sorted themselves into the several levels of educational attainment; instead, the differences are strongest among self-esteem scores obtained at the beginning of the study, apparently "anticipating" educational attainment. And that is surprising.

One plausible explanation for this tendency for self-esteem scores during high school to anticipate later educational attainment is that self-esteem is among the causes of such attainment--the A causes B interpretation which is reflected most clearly in Hypothesis 1a. Our multivariate analyses provide only very limited support for this interpretation; the partial correlations between high school self-esteem and later educational attainment, with background, ability, and earlier school performance controlled, range from .09 to .11. While such relationships remain statistically significant, they are much lower than the corresponding zero-order relationships; moreover, we suspect that if our set of control variables were more extensive or more perfectly measured, the partial correlations between high school self-esteem and later educational attainment might be reduced nearly to zero.

We should also note that the multivariate analyses provide no support at all for the notion that educational attainment contributes to self-esteem--the B causes A interpretation. The partial correlations

between self-esteem and educational attainment fail to confirm either Hypothesis 2a (see Table 6) or Hypothesis 3a (see Table 5).

The analyses indicate rather clearly that the primary basis for the correlation between high school self-esteem scores and later educational attainment is the fact that those aspects of family background, academic ability, and past school performance which predict later educational success also play an important part in the self-esteem of young men in tenth grade. This is the C causes both A and B interpretation reflected in Hypothesis 4. In addition, it appears that factors of background, ability, and past school performance become less and less important for self-esteem as a young man continues through high school and beyond (Table 5, top row). This pattern of declining importance for self-esteem appears with great consistency across quite a number of dimensions--family socioeconomic level, test scores, grade-point averages, rebellious and delinquent behaviors in school, and educational and occupational aspirations. (The very uniformity of this pattern, shown in Table 3, might suggest that the later self-esteem scores are simply less "predictable," no matter what variables we attempt to correlate with them; however, our other findings showing the impact of unemployment and occupational status on later self-esteem rule out such an explanation.)

These declining correlations with self-esteem can be interpreted within the Shifting Centrality Hypothesis; those attritubes of self-identity which have to do with conventional educational success have less

centrality, and thus less impact on self-esteem, as young men move through the final years of high school and go on to other experiences. This decreasing centrality of the factors linked to academic success is not limited to those who end their education with high school; it holds true also for those who enter college. In this connection it is worth noting a finding from one of our earlier analyses; the value placed on striving for academic achievement--studying hard to get good grades and academic honors--showed a decline throughout the high school years, and that decline was steepest among those who later went on to college (Bachman, Green, & Wirtanen, 1971, pp. 118-120). We conclude that, at least among young men who completed high school in the late 1960's, educational success became a less vital part of the self; and this was particularly true among those who were most successful, the ones who went on to college. We discuss later the question of whether these conclusions about the shifting centrality of educational factors can be generalized to other time periods, and to young women as well as young men.

The Impact of Occupational Attainment

One dimension of occupational success is status or prestige. Our findings, like the findings of many other researchers, show a substantial correlation between educational attainment and job status. Additional analyses (not reported here) have shown that the same dimensions of family background, ability, and aspirations which predict

educational attainment also predict job status. Thus we would expect to find at least some association between occupational status and self-esteem simply because self-esteem--especially during the early high school years--is linked to family background, ability, and aspirations. The more important question is whether the job status that a young man attains in his early twenties makes any additional contribution to his self-esteem.

Our multivariate analyses indicate that job status does indeed make a unique, though very modest, contribution to self-esteem. The data in Tables 5 and 6 show that after controls for background and ability, and even after controls for earlier measures of self-esteem, the status of a young man's job makes some marginal contribution to his present level of self-esteem.

Another and perhaps more basic dimension of occupational attainment, particularly during a time of high unemployment, is simply having a job. We stated earlier that employment versus unemployment provided the clearest instance in our data of a contemporaneous environmental factor--the "unemployment environment"--having an impact on self-esteem. Those young men in the study who were unemployed at the time of the last data collection showed lower than average self-esteem scores. Moreover, the findings suggest that the impact of unemployment upon self-esteem may be felt most heavily by those who fail to attain a high school diploma. Perhaps these young men are most inclined to blame themselves for their unemployment, since their lack of a diploma is something which

many sources constantly remind them that they could--and should--take steps to correct. (For a discussion of the "anti-dropout" campaign in the media, see Bachman et al., 1971, and Bachman, 1972.)

In sum, we conclude that occupational attainment, reflected in simply having a job, and also in the status of that job, has an impact on the self-esteem of young men in their early twenties. These findings support the B causes A interpretation, reflected in Hypotheses 2a and 3a.

Conclusions About Causation

We have already drawn several conclusions about the causal connections between attainment and self-esteem. Let us summarize them more systematically here, noting the extent to which each of our hypotheses and the underlying assumptions about causation has been confirmed or disconfirmed.

First of all, we find very little evidence to support the view that self-esteem during high school makes a unique causal contribution to later educational and occupational attainment, (A causes B), at least as we have measured these dimensions. Positive zero-order correlations appear between early self-esteem and later measures of both educational and occupational attainment, consistent with Hypothesis 1; however, the more stringent partial correlational analyses show little or no relationship, thus providing little support for Hypothesis 1a.

Second, we do find evidence that factors of background, ability, and prior experience influence both self-esteem and later attainments--specifically level of education attained and status of attained occupation. Thus there is some support for Hypothesis 4 (C causes both A and B), particularly for the dimension of educational attainment.

Third, we note that the strength of connection between other variables ("C" variables) and self-esteem shows some shift over time, consistent with the Shifting Centrality Hypothesis.

Fourth, the evidence suggests that educational attainment, at least in terms of the amount of schooling completed, makes no independent contribution to self-esteem five years after high school. Although a zero-order correlation exists between educational attainment and self-esteem, consistent with Hypothesis 2, the relationship does not survive statistical controls for background, ability, past school performance, and earlier self-esteem; thus the findings fail to support Hypothesis 2a. Moreover, the pattern of correlations with self-esteem across time is opposite to that predicted by Hypothesis 3 (for zero-order correlations) or Hypothesis 3a (for partial correlations).

Finally, we find that occupational attainment makes a modest but apparently unique, contribution to self-esteem (B causes A). For both dimensions, employment (versus unemployment) and status of attained occupation, we find a relationship with 1974

self-esteem, even after controlling for background, ability, past school performance, and earlier self-esteem. This finding is consistent with Hypothesis 2a. Furthermore, when we examined the relationships with self-esteem at all five points in time, controlling background and ability and past school performance,we found the attainment measures more strongly related to later self-esteem than to earlier self-esteem. This pattern of findings is predicted by Hypothesis 3a.

In sum, only a portion of the hypothesized relationships between attainment and self-esteem were found to exist in the present study. The evidence of any causal impact of early self-esteem on later educational attainment is weak at best, and there is no evidence of an impact on occupational attainment. On the other hand, occupational success shows a positive impact, albeit quite small, on self-esteem, whereas educational attainment shows no such independent effect. It appears that much of the association between attainment and self-esteem is best explained as reflecting a common set of prior causes--background, ability, and earlier scholastic success.

Some Limitations to These Conclusions

The ability to generalize from any single study, no matter how extensive, is always limited. Some limitations to the present work have already been mentioned; others are obvious. Most notably, our sample was limited to young men, and thus we cannot be sure that the

same relationships between self-esteem and educational and occupational attainment would be found for young women. Douvan and Gold (1967), in their review of the literature on adolescent self-esteem, concluded that the self-esteem of boys and girls depends to some extent on different components, and that boys are more likely than girls to establish a sense of esteem ". . . by asserting competence to achieve in any one of a number of competitive fields (athletics, a career-line, intellectual activity, leadership in school affairs, responsibility in a job)" (p. 250). Our own guess--and at present it can be little more than that--is that some such differences between boys and girls did exist at the start of our longitudinal study in 1966, that they probably still exist to at least some degree, but that the differences are likely to diminish as views about women's and men's roles continue to change.

Another limitation to our sample and the present analysis is that we have not looked separately at racial subgroups, particularly blacks. Rosenberg and Simmons (1971) have recently discussed racial differences in self-esteem at some length, and our own earlier analyses included a brief examination of self-esteem scores for three different sets of black respondents (distinguished by geographical region and school segregation/integration). Our sample was not designed to support accurate generalizations about blacks, so our early analyses were tentative and carefully qualified. Perhaps our most important

conclusion concerning racial differences in self-esteem and many other dimensions treated in the study was that it seemed unwise to treat blacks as a single analysis group (Bachman, 1970, pp. 197-201). The present paper has made no racial distinctions, partly because preliminary analyses indicated that controlling race would have made virtually no difference for the sample as a whole, and partly because we continue to feel that our sample is not adequate for separate racial analyses--particularly analyses as complex as those presented here.

We noted that views about sex roles seem to be undergoing considerable change, and thus we would be very cautious about using data collected in the nineteen-sixties or earlier as a basis for generalizing about sex differences in the seventies or eighties. But this is simply one example of a very broad problem. Cronbach (1975) argued convincingly that social science data-especially correlational data gathered in real-life situations--are subject to many interactions and extraneous factors, at least some of which are likely to change over time. His summary appraisal bears quoting here:

> Generalizations decay. At one time a conclusion describes the existing situation well, at a later time it accounts for rather little variance, and ultimately it is valid only as history. The half-life of an empirical proposition may be great or small.

> The more open a system, the shorter the half-life of relations within it are likely to be. (Cronbach, 1975, pp. 122-123)

Those aspects of the social system we have been dealing with in this paper--the links between attainment and self-esteem in young men--may have been especially open to change during recent years. During the period in which the young men in our sample were making the transition from adolescence (age 15) to young adulthood (age 23), they and the rest of society were also making the transition from the mid-sixties (1966) to the mid-seventies (1974). This was a turbulent interval involving substantial changes in the job market and increasingly critical discussion about the value of education. Thus the relationships we have been studying and trying to isolate may have been changing all the while--perhaps at a rate rapid enough to lead us to faulty conclusions.

The problems posed by social change--secular trends--are particularly troublesome for the longitudinal study which follows a single cohort for some period of time. As several authors have pointed out (Buss, 1973; Schaie, 1965), the data from such a study do not permit us to distinguish with certainty between genuine developmental or maturational trends and those changes which affect society as a whole.

Given the limitation outlined above, there are at least two quite different ways of interpreting our finding that educational success and

its correlates became much less central to the self-esteem of the young men in our sample as they moved through high school and beyond. The first interpretation, and the one which we have emphasized, is that this shift in centrality is a fairly typical part of the developmental sequence followed by young people in this society. During the late high school years and the period which follows, the young person in the process of becoming an adult increasingly anticipates and experiences situations in which self-evaluation depends on factors quite different from academic success, and this results in a reduced emphasis on the academic side of things. An alternative interpretation of our findings is that they reflect a particular secular trend or cultural change during the late sixties and early seventies--a general decline in the importance or value that society places upon education and educational success. Trust in government declined dramatically during this period, and it may be that faith in education as the pathway to success has also suffered a setback. The developmental and secular trend interpretations are not, of course, mutually exclusive; both may have played a part in shaping our findings. A clear estimate of the relative importance of each requires additional data from more than one cohort.

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Footnotes

[1]The eta statistic is not restricted to linear relationships, whereas the product-moment correlation is; therefore, when the two statistics are nearly identical, as is true for the values presented in Figure 1, it indicates that the relationship is linear.

[2]Several of the measures included in Table 3 represent aspects of the self-concept. The clearest example is self-concept of school ability; but it could be argued that college and occupational aspirations, and even self-reports of grades and misbehaviors in school, are also parts of an individual's self-concept. As such, these dimensions may be viewed as different components or facets of global self esteem, rather than as separate and logically prior causes. (This might help to account for some of the "time-matching" noted above; another possible explanation is correlated measurement error.) In any event, the general pattern of gradually lower correlations with later measures of self-esteem holds for these measures as well as the other ones in Table 3.

[3]We also examined hourly wage rates, but found them essentially uncorrelated with self-esteem measures at any point in time. This finding is consistent with other analyses of wage rate data in this study (currently unpublished) which show very few relationships

between wage rates and other variables. We suspect that this general lack of relationship is an age-specific phenomenon, resulting from the fact that many of our respondents had only recently entered the work force, and their wage rates had not begun to reach the levels that would be expected for more experienced workers. A similar finding and interpretation has recently been presented by Sewell and Hauser (1972).

* * * *

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Table 1

Self-esteem Items and Item-Index Correlations

	1966			1974		
	M	SD	r[c]	M	SD	r[c]
I feel that I am a person of worth, at least on an equal plane with others.[a]	3.89	.91	.57	4.52	.68	.62
I feel that I have a number of good qualities.[a]	3.72	.82	.56	4.36	.69	.66
I am able to do things as well as most other people.[a]	3.73	.79	.57	4.31	.71	.61
I feel I do not have much to be proud of.[b]	3.87	1.15	.54	4.03	1.01	.55
I take a positive attitude toward myself.[a]	3.64	.89	.59	4.12	.85	.69
Sometimes I think I am no good at all.[b]	3.47	1.06	.58	4.06	.85	.67
I am a useful guy to have around.[a]	3.70	.77	.48	3.99	.75	.63
I feel that I can't do anything right.[b]	3.83	1.02	.56	4.11	.82	.60
When I do a job, I do it well.[a]	3.67	.81	.51	4.35	.63	.51
I feel that my life is not very useful.[b]	3.87	1.08	.62	4.39	.82	.58
Self-esteem index	3.74	.52	---	4.22	.48	---

Note. N = 1,628 with up to 2.5% missing data.

[a]Response of "almost always true" coded 5 (high self-esteem).

[b]Response of "never true" coded 5 (high self-esteem).

[c]Item-Index correlation.

Table 2

Cross-time Self-esteem Correlations and Stability Coefficients[a]

	Self-esteem				
	1966	1968	1969	1970	1974
Self-esteem in 1966	1.00	.73	.64	.57	.40
Self-esteem in 1968	.53	1.00	.89	.79	.55
Self-esteem in 1969	.48	.64	1.00	.89	.62
Self-esteem in 1970	.42	.56	.65	1.00	.69
Self-esteem in 1974	.30	.40	.44	.49	1.00
M	3.74	3.83	3.88	3.90	4.22
SD	.52	.49	.50	.49	.48
N	1622	1501	1492	1408	1594

[a]Product-moment correlations are below the diagonal; stability coefficients are above. The stability coefficients were computed using a path analysis approach as developed by Heise (1969).

Table 3

Self-esteem Correlated with Measures of Attainment and Related Factors

	Self-esteem					Educational Attainment	Status of Occupation
	1966	1968	1969	1970	1974	1974	1974
Socioeconomic level 1966	.16	.11	.12	.12	.07	.44	.20
Ability 1966	.21	.18	.17	.20	.13	.50	.30
Grades 1966	.26	.21	.17	.16	.12	.51	.32
Grades 1968	.25	.25	.20	.16	.14	.49	.29
Grades 1969	.21	.25	.21	.14	.12	.50	.30
Self-concept of school ability '66	.36	.28	.27	.24	.17	.43	.24
Self-concept of school ability '68	.29	.32	.29	.25	.18	.44	.21
Rebellious behavior in school '66	-.36	-.26	-.18	-.20	-.15	-.28	-.18
Rebellious behavior in school '68	-.21	-.27	-.19	-.17	-.10	-.26	-.15
Delinquent behavior in school '66	-.19	-.10	-.04	-.06	.00	-.32	-.14
Delinquent behavior in school '68	-.18	-.14	-.11	-.07	-.06	-.38	-.17
Delinquent behavior in school '69	-.15	-.12	-.10	-.08	-.03	-.36	-.19

Table 3

(continued)

	Self-esteem					Educational Attainment	Status of Occupation
	1966	1968	1969	1970	1974	1974	1974
College plans 1966	.22	.13	.12	.10	.10	.41	.23
College plans 1968	.22	.19	.16	.14	.11	.41	.20
College plans 1969	.25	.22	.20	.16	.16	.61	.30
Status of aspired occupation '66	.19	.13	.09	.11	.11	.43	.26
Status of aspired occupation '68	.20	.15	.13	.12	.09	.50	.28
Status of aspired occupation '69	.21	.18	.16	.14	.08	.52	.30
Status of aspired occupation '70	.21	.17	.15	.14	.10	.56	.31
Status of aspired occupation '74	.15	.15	.12	.12	.11	.55	.45
Educational attainment 1974	.26	.21	.20	.17	.15	1.00	.42
Status of attained occupation '74	.15	.13	.14	.20	.16	.42	1.00
Employment vs unemployment '74	.03	.00	.05	-.01	.10	.06	.12

Note: Based on an N of 1600 and a design effect of 2.25, an r of .08 is significant at $p < .05$, and an r of .10 is significant at $p < .01$.

Table 4

Cross-time Self-esteem Scores for Employed and Unemployed

		Self-esteem				
1974 Employment Status		1966	1968	1969	1970	1974
Employed (N = 1,205)	M	3.72	3.82	3.88	3.89	4.23
	SD	.51	.47	.49	.48	.47
Unemployed (N = 111)	M	3.66	3.81	3.79	3.91	4.05
	SD	.56	.55	.52	.53	.58
Difference	M	.06	.01	.09	-.02	.18*

*t = 3.78, p < .05, two-tailed, incorporating design effect

TABLE 5

Multiple and Partial Correlations with Cross-Time Self-Esteem

	Self-Esteem				
	1966	1968	1969	1970	1974
Multiple R^a	.30**	.28**	.24**	.22**	.16**
Partial r^b (with educational attainment)	.11**	.09**	.10**	.06	.08*
Partial r^c (with occupational status)	.05	.04	.07	.13**	.11**
Partial r^d (with employment)	.03	.00	.05	-.02	.10*

[a]Multiple correlation of self-esteem with ability, socioeconomic level, and ninth grade grades.

[b]Partial correlation between self-esteem and educational attainment, holding constant ability, socioeconomic level, and ninth grade grades.

[c]Partial correlation between self-esteem and status of attained occupation, holding constant ability, socioeconomic level, and ninth grade grades.

[d]Partial correlation between self-esteem and employment, holding constant ability, socioeconomic level, and ninth grade grades.

*$p < .05$, incorporating design effect.

**$p < .01$, incorporating design effect.

Table 6

Partial Correlations with 1974 Self-esteem

	Educational Attainment 1974	Status of Occupation 1974	Employed vs Unemployed 1974
Zero-order r with 1974 self-esteem	.15**	.16**	.10*
Partial r[a] with 1974 self-esteem	.08*	.11**	.10*
Partial r[b] with 1974 self-esteem	.06	.10*	.09*
Partial r[c] with 1974 self-esteem	.04	.09*	.10*

[a]Partial correlation, holding constant ability, socioeconomic level, and grades (1966).

[b]Partial correlation, holding constant ability, socioeconomic level, grades (1966), and self-esteem (1966).

[c]Partial correlation, holding constant ability, socioeconomic level, grades (1966, 1968, 1969), and self-esteem (1966, 1968, 1969).

*$p < .05$, two-tailed, incorporating design effect.

**$p < .01$, two-tailed, incorporating design effect.

Figure Captions

Figure 1. Cross-time self-esteem scores for six categories of educational attainment.

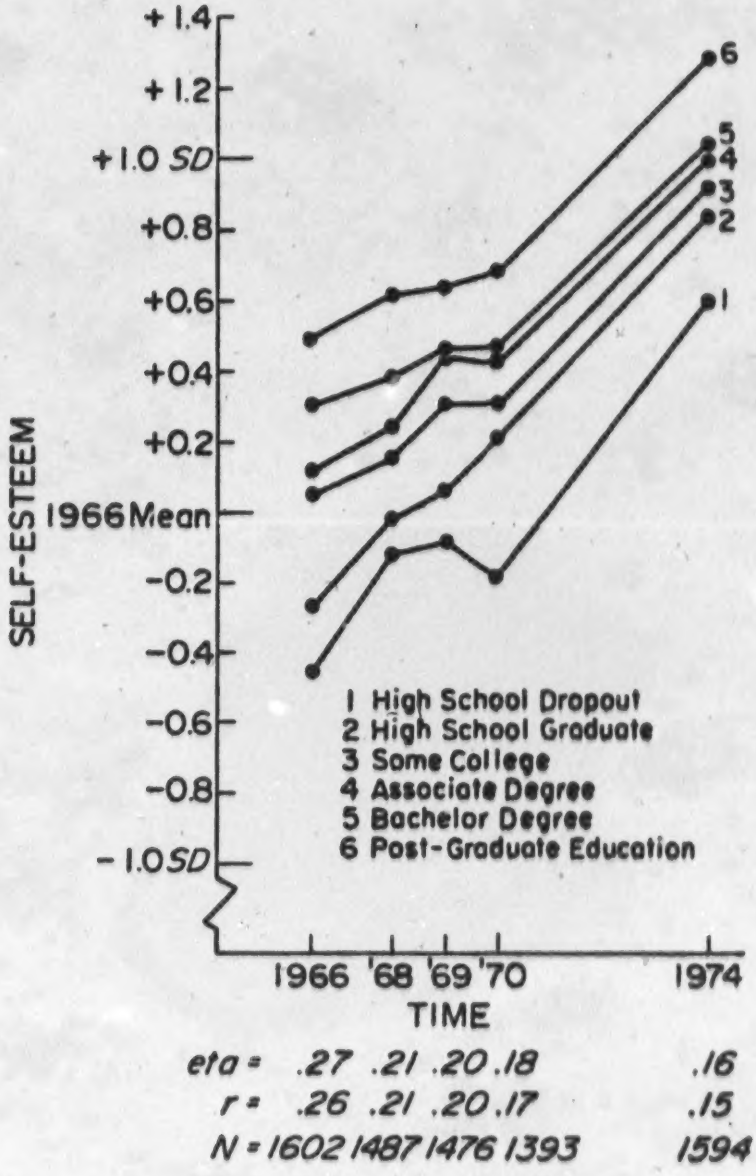

Figure 1. Cross-time self-esteem scores for six categories of educational attainment